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09/602,278	06/23/2000	Jose R. Brunheroto	BC999047/1455p	9149

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EXAMINER

SALTARELLI, DOMINIC D

ART UNIT	PAPER NUMBER
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2611

DATE MAILED: 01/16/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/602,278

Applicant(s)

BRUNHEROTO ET AL.

Examiner

Dominic D Saltarelli

Art Unit

2611

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 June 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-29 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

Specification

1. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

The abstract of the disclosure is objected to because line 2 includes the term "are described". Correction is required. See MPEP § 608.01(b).

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 18 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 18 states the play-out device "comprises" a cable head-end, and given the traditional size and complexity of cable head-ends, to say a single play-out device comprises a cable-head end is indefinite. Examiner suggests including the play-out device *within* a cable head-end.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1, 12-16, 19-21, 25, and 27-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Copriviza et al. (5,319,453) [Copriviza] in view of Echeita et al. (5,826,165) [Echeita].

Regarding claim 1, Copriviza discloses a method for automated monitoring of quality of service of video material being distributed and played (col. 3, lines 50-55), the method comprising, embedding a signature in each frame of the video material by a program source device control (col. 8, lines 26-39) and computing play-out statistics for the video material based on the signature by a program play-out device control (col. 10, lines 35-49).

Copriviza fails to disclose the video material is digital.

Echeita teaches a method for monitoring quality of service of digital video (col. 1, lines 54-58), making the process much more efficient, as automated monitoring involves the use of digital codes, using digital video removes the need for processing two different types of signals (col. 4, lines 59-66).

It would have been obvious at the time to a person of ordinary skill in the art to modify the method disclosed by Copriviza to monitor digital video material

as taught by Echeita, for the advantage of simplifying the process by removing the need to process two different types of signals.

Regarding claim 12, Copriviza and Echeita disclose the system of claim 1, and additionally disclose the digital video material further comprises a digital advertisement (Echeita, col. 4, lines 42-45).

Regarding claim 13, Copriviza discloses a system for automated monitoring of quality of service of video material being distributed and played (col. 3, lines 50-55), the system comprising:

a program source of viewing program data (Figure 1, col. 7, lines 7-21) the program source embedding a signature in each frame of digital video material within the viewing program data (col. 8, lines 26-39);

a play-out device (36) for receiving the viewing program data and computing play-out statistics for the digital video material based on the signature (col. 10, lines 35-49); and

a display device (202) coupled to the play-out device (Figure 7) for displaying video output of the viewing program data from the play-out device (col. 10, lines 49-52).

Copriviza fails to disclose the video material is digital.

Echeita teaches a method for monitoring quality of service of digital video (col. 1, lines 54-58), making the process much more efficient, as automated

monitoring involves the use of digital codes, using digital video removes the need for processing two different types of signals (col. 4, lines 59-66).

It would have been obvious at the time to a person of ordinary skill in the art to modify the method disclosed by Copriviza to monitor digital video material as taught by Echeita, for the advantage of simplifying the process by removing the need to process two different types of signals.

Regarding claim 14, Copriviza and Echeita disclose the system of claim 13, and additionally disclose the viewing program data further comprises a cable station program feed (Copriviza, col. 8 line 67 – col. 9 line 1).

Regarding claim 15, Copriviza and Echeita disclose the system of claim 13, and additionally disclose the viewing program data further comprises a satellite program feed (Echeita, col. 4 line 66 – col. 5 line 4).

Regarding claim 16, Copriviza and Echeita disclose the system of claim 13, and additionally disclose the viewing program data further comprises an air wave program feed (Copriviza, col. 8 line 67 – col. 9 line 1).

Regarding claim 19, Copriviza and Echeita disclose the system of claim 13, and additionally disclose the play-out device further comprises a computer (Copriviza, Figure 7, col. 24, lines 26-55).

Regarding claim 20, Copriviza and Echeita disclose the system of claim 13, and additionally disclose the digital video material further comprises a digital advertisement (Echeita, col. 2, lines 28-33).

Regarding claim 21, Copriviza and Echeita disclose the system of claim 13, and additionally disclose the program source further provides the signature in a meta-stream (Echeita, col. 5, lines 4-14) the meta-stream including an identifier for the digital video material, a length of the digital video material, and a time for play-out of the digital video material.

Regarding claim 25, Copriviza discloses a method for achieving automated monitoring of quality of service of video material play-out in a video distribution and display system (col. 3, lines 50-55), the method comprising embedding video source material at a program source with hidden data (col. 8, lines 26-39) for uniquely marking an advertisement (col. 8, lines 57-59) with the video source material.

Copriviza fails to disclose the video material is digital, embedding the video source material with a meta-stream, isolating the meta-stream and a digital advertisement from the video source material in a program play-out device, and utilizing the meta-stream in the program play-out device to determine play-out statistics for the digital advertisement.

Echeita teaches a method for achieving automated monitoring of quality of service of digital video material (col. 4, line 66 – col. 5 line 4), embedding video source material with a meta-stream (col. 5, lines 4-14) which uniquely marks a digital advertisement with the video source material, isolating the meta-stream and the digital advertisement from the video source material in a program play-out device (col. 7, lines 43-53), and utilizing the meta-stream in the program play-out device to determine play-out statistics for the digital advertisement (col. 10, lines 48-58). The purpose of using an all digital environment and associating a meta-data stream with the digital video material is so that the complexity of implementing the method is greatly reduced (col. 4, lines 53-66).

It would have been obvious at the time to a person of ordinary skill in the art to modify the method disclosed by Copriviza to use digital video material, embed the video source material with a meta-stream, isolate the meta-stream and digital advertisement from the video source material in a program play-out device, and utilize the meta-stream in the program play-out device to determine play-out statistics for the digital advertisement, as taught by Echeita, for the advantage of reducing the complexity of implementing the method.

Regarding claim 27, Copriviza and Echeita disclose the system of claim 25, and additionally disclose the meta-stream further includes an identifier for the digital advertisement, a number of frames of the digital advertisement, and a time for play-out of the digital advertisement (Echeita, col. 8, lines 10-21, 36-39).

Regarding claim 28, Copriviza and Echeita disclose the system of claim 27, and additionally disclose the play-out statistics further comprise a start-time of play-out, a number of frames in the digital advertisement correctly decoded, and an end-time of play-out of the digital advertisement (Copriviza, col. 10, lines 39-51 and col. 12, lines 17-23).

Regarding claim 29, Copriviza and Echeita disclose the system of claim 28, and additionally disclose providing the play-out statistics to the program source (Copriviza, col. 10, lines 52-54) and analyzing the play-out statistics to determine quality of digital advertisement display (Copriviza, col. 55-64).

6. Claims 2, 22-24, and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Copriviza and Echeita as applied to claim 1 above, and further in view of Iggulden (6,597,405).

Regarding claim 2, Copriviza and Echeita disclose the method of claim 1, but fail to disclose utilizing a hashing algorithm to produce the signature for each frame in the digital video material during encoding of the digital video material.

Iggulden discloses utilizing a hashing algorithm to produce a signature for each frame in a video material (col. 6, lines 25-36), allowing the material to be quickly identified in real time.

It would have been obvious at the time to a person of ordinary skill in the art to modify the method disclosed by Copriviza and Echeita to utilize a hashing algorithm to produce the signature for each frame in the digital video material, as taught by Iggulden, during encoding of the digital video material. The reason for doing so would be to make each frame quickly identifiable in real time.

Regarding claim 22, Copriviza and Echeita disclose the system of claim 21, and additionally disclose capturing the meta-stream (Echeita, col. 7, lines 43-53), but fail to disclose the play-out statistics are computed by computing a signature for the digital video material and comparing the computed signature to the provided signature.

Iggulden teaches computing a signature for video material and comparing the computed signature to a known signature (col. 6, lines 25-28) for identifying the video material.

It would have been obvious at the time to a person of ordinary skill in the art to modify the system disclosed by Copriviza and Echeita to compute the play-out statistics by computing a signature for the digital video material and comparing the computed signature to the provided signature, as taught by Iggulden, for the advantage of computing play-out statistics based on frame signatures without relying upon frame continuity.

Regarding claim 23, Copriviza, Echeita, and Iggulden disclose the system of claim 22, and further disclose identifying a time of play-out of the digital video material (Copriviza, col. 10, line 40), and determining a duration of the digital video material actually played-out (Copriviza, col. 10, lines 39-45). Copriviza, Echeita, and Iggulden also disclose computing a number of frames based on frame signatures (Copriviza, col. 8, lines 26-39) and comparing frame signatures to a known signature (Iggulden, col. 6, lines 25-28) for identification purposes.

Copriviza, Echeita, and Iggulden fail to disclose computing a number of frames in the digital video material having a match condition with the signature.

Iggulden teaches computing a signature for video material and comparing the computed signature to a known signature (col. 6, lines 25-28) for identifying the video material.

It would have been obvious at the time to a person of ordinary skill in the art to further modify the system of Copriviza, Echeita, and Iggulden to compute a number of frames in the digital video material having a match condition with the signature, as taught by Iggulden, for the advantage of computing a number of frames based on frame signatures without relying upon frame continuity.

Regarding claim 24, Copriviza, Echeita, and Iggulden disclose the system of claim 23, and further disclose the video play-out device stores the play-out statistics in a local storage (Copriviza, col. 10, lines 39-45) and transmits the play-out statistics to the program source (Copriviza, col. 10, lines 52-54), wherein

the program source measures quality of service for the digital video material from automated analysis of the play-out statistics (Copriviza, col 10, lines 55-64)

Regarding claim 26, Copriviza and Echeita disclose the method of claim 25, and additionally disclose that the hidden data further comprises a signature in each frame (Copriviza, col. 8, lines 26-39), fail to disclose the signature is generated by a hashing algorithm.

Iggulden discloses utilizing a hashing algorithm to produce a signature for each frame in a video material (col. 6, lines 25-36), allowing the material to be quickly identified in real time.

It would have been obvious at the time to a person of ordinary skill in the art to modify the method disclosed by Copriviza and Echeita to utilize a hashing algorithm to produce the signature for each frame in the digital video material, as taught by Iggulden. The reason for doing so would be to make each frame quickly identifiable in real time.

7. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Copriviza, Echeita, and Iggulden as applied to claim 2 above, and further in view of Linnartz (6,570,996).

Regarding claim 3, Copriviza, Echeita, and Iggulden disclose the method of claim 2, but fail to disclose providing a key identifier in a header of the signature and identifying inclusion of the signature based on the key identifier.

Linnartz teaches providing a key identifier in a header of a signature [watermark] (col. 2, lines 37-39) and identifying inclusion of the signature based on the key identifier (col. 2, lines 39-47), increasing the reliability of signature detection (col. 2, lines 60-67).

It would have been obvious at the time to a person of ordinary skill in the art to modify the method of Copriviza, Echeita, and Iggulden to include a key identifier in a header of the signature and identifying inclusion of the signature based on the key identifier, as taught by Linnartz, for the advantage of increasing the reliability of signature detection.

8. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Copriviza and Echeita as applied to claim 13 above, and further in view of Caporizzo (5,574,495).

Regarding claim 17, Copriviza and Echeita disclose the system of claim 13, but fail to disclose the play-out device is a set-top box.

Caporizzo discloses a system for automated monitoring of quality of service wherein the play-out device comprises a set-top box (col. 1, lines 63-66), allowing quality of service measurements to take place within a subscribers home so that the head-end can isolate errors (col. 2, lines 5-10, 34-39).

It would have been obvious at the time to modify the system disclosed by Copriviza and Echeita to include a set-top box as the play-out device as taught

by Caporizzo, for the advantage of allowing quality of service measurements to take place within a subscribers home so that the head-end can isolate errors

9. Claims 4-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Copriviza, Echeita, and Iggulden as applied to claim 2, and further in view of Goodman et al. (6,173,271) [Goodman].

Regarding claim 4, Copriviza, Echeita, and Iggulden disclose the method of claim 2, and additionally disclose embedding further comprises creating a meta-stream for the digital video material (Echeita, col. 5, lines 4-14) and provide a means for decrypting packets (Echeita, Figure 2, item 64, col. 6, lines 52-54). Copriviza, Echeita, and Iggulden fail to disclose encrypting the meta-data stream.

Goodman discloses encrypting video identification elements (col. 9 line 60 – col. 10 line 3) in order to preserve the security of the method.

It would have been obvious at the time to a person of ordinary skill in the art to modify the method of Copriviza, Echeita, and Iggulden to include encrypting the meta-stream (Goodman, col. 10, lines 4-20) as taught by Goodman, for the advantage of preserving the security of the method.

Regarding claim 5, Copriviza, Echeita, Iggulden, and Goodman disclose the method of claim 4, and additionally disclose the meta-stream further comprises a header session (Echeita, col. 6, lines 46-48).

Regarding claim 6, Copriviza, Echeita, Iggulden, and Goodman disclose the method of claim 5, and additionally disclose the header session comprises an identifier, a length, and a time of play-out of the digital video material (Copriviza, col. 10, lines 39-51 and col. 12, lines 17-23).

Regarding claim 7, Copriviza, Echeita, Iggulden, and Goodman disclose the method of claim 4, and additionally disclose the step of computing statistics further comprises capturing the meta-data stream (Echeita, col. 7, lines 43-53) and computing the signature for an incoming stream of digital video material (Copriviza, col. 9, lines 24-35).

Regarding claim 8, Copriviza, Echeita, Iggulden, and Goodman disclose the method of claim 7, but fail to disclose utilizing the signature of the meta-stream to trigger comparison with the computed signature of the incoming stream of digital video material.

Iggulden discloses event markers which trigger comparison of known signatures with the signatures of an incoming stream of video material (col. 6, lines 25-36), allowing the method to only perform comparison calculations when necessary.

It would have been obvious at the time to a person of ordinary skill in the art to further modify the method disclosed by Copriviza, Echeita, Iggulden, and Goodman to utilize the signature of the meta-stream to trigger comparison with

the computed signature of the incoming stream of digital video material, as taught by Iggulden, for the advantage of only performing comparison calculations when necessary.

Regarding claim 9, Copriviza, Echeita, Iggulden, and Goodman disclose the method of claim 8, and further disclose identifying a time of play-out for the video stream (Copriviza, col. 10, line 40) and determining a duration of the digital video material played-out (Copriviza, col. 10, lines 61-64).

Copriviza, Echeita, Iggulden, and Goodman also disclose computing a number of frames based on frame signatures (Copriviza, col. 8, lines 26-39).

Copriviza, Echeita, Iggulden, and Goodman fail to disclose computing a number of frames having a matching signature to the computed signature.

Iggulden teaches comparing signatures of video frames to a known signature to identify them through matching (col. 6, lines 32-36).

It would have been obvious at the time to a person of ordinary skill in the art to further modify the method disclosed by Copriviza, Echeita, Iggulden, and Goodman compare signatures of video frames with a computed signature to match them, as taught by Iggulden, in order to compute the number of frames having a matching signature to the computed signature, for the advantage of determining the number of frames received without relying upon frame continuity.

Regarding claim 10, Copriviza, Echeita, Iggulden, and Goodman disclose the method of claim 9, and further disclose storing the play-out statistics on a local storage device for the play-out device control (Copriviza, col. 10, lines 39-45).

Regarding claim 11, Copriviza, Echeita, Iggulden, and Goodman disclose the method of claim 10, and further disclose transmitting the play-out statistics back to the program source device control for quality of service measurements (Copriviza, col. 10, lines 55-64).

10. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Copriviza and Echeita as applied to claim 13, and further in view of Goodman.

Regarding claim 18, Copriviza and Echeita disclose the system of claim 13, but fail to disclose the play-out device further comprises a cable head-end.

Goodman discloses a head-end (Figure 1B, item 100) that includes decoder (141) for computing play-out statistics (col. 9, lines 47-59), centralizing the equipment used in the system.

It would have been obvious at the time to a person of ordinary skill in the art to further modify the system of Copriviza and Echeita to include in the play-out device a cable head-end, as taught by Goodman, for the advantage of centralizing the equipment used in a quality of service monitoring system.

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Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Haselwood et al. (4,025,851) and Lert, Jr. et al. (4,230,990), which both deal with automatically monitoring broadcast programs.

12. The following are suggested formats for either a Certificate of Mailing or Certificate of Transmission under 37 CFR 1.8(a). The certification may be included with all correspondence concerning this application or proceeding to establish a date of mailing or transmission under 37 CFR 1.8(a). Proper use of this procedure will result in such communication being considered as timely if the established date is within the required period for reply. The Certificate should be signed by the individual actually depositing or transmitting the correspondence or by an individual who, upon information and belief, expects the correspondence to be mailed or transmitted in the normal course of business by another no later than the date indicated.

Certificate of Mailing

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Typed or printed name of person signing this certificate:

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Please refer to 37 CFR 1.6(d) and 1.8(a)(2) for filing limitations concerning facsimile transmissions and mailing, respectively.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dominic D Saltarelli whose telephone number is (703) 305-8660. The examiner can normally be reached on M-F 10-7.

If attempts to reach the examiner by telephone are unsuccessful, the primary examiner, Christopher Grant can be reached on (703) 305-4755. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4700.

Dominic Saltarelli
Patent Examiner
Art Unit 2611

DS


CHRIS GRANT
PRIMARY EXAMINER